

minute/1.73m², respectively). **CONCLUSION:** This analysis identified a significant decrease in GFR over time. Persons with controlled BP taking antihypertensive therapy had higher GFR than those taking no medication suggesting that antihypertensive medication use preserves kidney function.

PUK3

EPIDEMIOLOGY AND OUTCOMES OF PATIENTS WITH CHANGES IN RENAL FUNCTION DURING HOSPITALIZATION THAT MAY REQUIRE DRUG DOSAGE ADJUSTMENT

Gupta V, Derby KG, Tabak YP, Goetz A, Johannes RS, Darin R

Cardinal Health, Marlborough, MA, USA

OBJECTIVE: Failure to dose adjust for renal insufficiency during hospitalization can be a common cause for medication errors and are an important function for clinicians. We examined the prevalence, mortality and length of stay (LOS) for cases that exhibited changes in renal function during hospitalization. **METHODS:** We retrospectively analyzed 1,011,055 non-dialysis admissions who had at least two serum creatinine values during hospital stay across 74 hospitals that provided electronic laboratory results from 2003–2006. We used a modified Cockcroft-Gault (140-age)/SCr (x 0.85 for females) to determine baseline and changing creatinine clearance (eCrCl, ml/min). Cases were stratified based on eCrCl as normal (≥ 81 ml/min), mild (50–80 ml/min), moderate (16–49 ml/min), and advanced (≤ 15 ml/min). Worsening or improvement was defined as cases that moved one or more eCrCl strata to another during hospitalization. Unadjusted hospital mortality (95% CI) and median LOS were evaluated. **RESULTS:** On admission 29.6% had normal, 34.4% had mild, 34.1% had moderate, and 1.9% had advanced eCrCl. Of these cases the eCrCl remained the same in 79.2%, worsened in 11.6% and improved in 9.2%. Mortality and median LOS was highest for worsening eCrCl (7.9 [CI:7.8–8.1] and 6 days) followed by those remaining the same (2.8 [CI:2.8–2.9] and 4 days) and those with improving eCrCl (1.8 [CI:1.7–1.9] and 4 days). Cases with ≥ 2 strata worsening in eCrCl (0.5% of cases) had higher mortality and LOS (25.9 [CI:24.7–27.1] and 10 days) than those with moderate (5.0 [CI:4.9–5.1] and 5 days, 28.8% of cases) or advanced (13.3 [CI:12.7–13.8] and 5 days, 1.5% of cases) eCrCl that remained the same. **CONCLUSION:** Both improvement and worsening renal function necessitating potential dosage adjustment are common during hospitalization. Mortality and LOS is higher for cases that had worsening renal function. Comprehensive renal dosing programs have the potential of improving medication safety and related outcomes.

URINARY/KIDNEY DISORDERS—Cost Studies

PUK4

COST-EFFECTIVENESS OF SEVELAMER IN THE TREATMENT OF HYPERPHOSPHATEMIA ASSOCIATED WITH CHRONIC KIDNEY DISEASE IN MEXICO

Idrovo J¹, Rivas R², Zapata L²

¹Guia Mark, Mexico, DF, Mexico, ²Guia Mark, México, DF, Mexico

OBJECTIVE: The treatment of chronic kidney disease (CKD) with dialysis is associated with the appearance of hyperphosphatemia, which contributes to the presence of vascular calcifications, thus increasing the probability of the occurrence of cardiovascular events and death in these patients. The objective of this analysis was to evaluate the incremental cost-effectiveness of the use of sevelamer to manage hyperphosphatemia secondary to CKD from an institutional perspective. **METHODS:** A Markov model was created in TreeAge to estimate the costs and benefits of the treatment with sevelamer or

calcium tablets in patients with renal failure considering a temporary horizon of 60 months. The transition probabilities were taken from clinical trials identified through a systematic review of literature. The effectiveness measure considered was an increase in patient survival. Data related to the use of resources were obtained from a nominal group and cost information was obtained from price lists and rates published by health institutions. In addition a univariate sensitivity analysis was performed on the probability of death for sevelamer group. Costs were estimated using 2007 prices and are expressed in US dollars (exchange rate of 10.93 pesos per US dollar). **RESULTS:** Survival of patients with CKD increased in 18.4% in the sevelamer group, compared to the calcium group (83.12% vs. 64.72%). The expected average monthly cost was \$639 for calcium and \$989.50 for sevelamer. The Cost-Effectiveness Ratio of sevelamer and calcium was \$1068 and \$777.70, respectively, and the Incremental Cost-Effectiveness Ratio for the implementation of sevelamer vs. calcium was \$3343.50. **CONCLUSION:** Sevelamer is a cost-effective drug for the treatment of hyperphosphatemia in patients with chronic kidney disease in the Mexican context.

PUK5

COST-EFFECTIVENESS OF CINECALCET IN THE TREATMENT OF SECONDARY HYPERPARATHYROIDISM (SHPT)

Pinto CG¹, Weigert A², Pissarra I³, Paquete AT⁴

¹Instituto Superior de Economia e Gestão, Technical University of Lisbon, Lisboa, Portugal, ²Santa Cruz Hospital, Carnaxide, Portugal,

³Instituto de Medicina Preventiva, Lisboa, Portugal, ⁴Research Centre on the Portuguese Economy—CISEP, Lisboa, Portugal

OBJECTIVE: To determine the incremental cost-effectiveness ratio (ICER) of cinacalcet as an adjuvant therapy for SHPT from the perspective of the Portuguese NHS. **METHODS:** A probabilistic Markov model was used to compare best standard care (BSC) with BSC plus cinacalcet. The model was developed in cycles of six months until the death of all patients. Patients were distributed according to the risk of hospital admission due to cardiovascular events, major or minor fractures and parathyroidectomies. The absence of events and/or death was also considered. The probabilities of SHPT's complications were obtained from the literature. Portuguese official mortality rates were weighted by the presence of renal insufficiency and by the PTH levels. Due to lack of alternative, the resources used (only direct medical costs) were estimated by a Delphi panel of eight nephrologists and by a physical medicine and rehabilitation specialist. Unit costs were obtained from Portuguese official sources. Market shares of medicines prescribed in outpatient services were selected from the IMS. **RESULTS:** Cinacalcet increases 0.4 life years (LY) per patient with SHPT. The use of cinacalcet saves hospital admissions and follow-up costs of secondary events, but is associated with an ICER of €53,682 per LY gained. However, if dialysis costs are not considered, the ICER is €32,374 per LY gained and the probability of being cost-effective increases from 61% to 83% if acceptability for reimbursement is limited at €50,000 per LY gained. **CONCLUSION:** Using a €50,000 WTP threshold, cinacalcet was found cost-effective if the increased cost of dialysis was excluded. The inclusion of this cost (induced by a longer life expectancy) leads to an ICER of €53,682 per LY gained. A clear paradox arises here as the alternative becomes less cost-effective by increasing dialysis patients' longevity.